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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/714,292

11/17/2000

Takatoshi Yamanaka

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03/31/2006

STAAS & HALSEY LLP

SUITE 700

1201 NEW YORK AVENUE, N.W.

WASHINGTON, DC 20005

EXAMINER

EDWARDS, PATRICK L

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/714,292

Applicant(s)

YAMANAKA ET AL.

Examiner

Patrick L. Edwards

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01-24-2006 has been entered.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 16 is currently non-statutory. This could be remedied by amending the preamble to recite that image processing storage medium was a computer readable storage medium. For instance, it could be amended to recite "...an image processing program *embodied on a computer readable medium* to operate a computer system..."

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 15, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Ogawa (USPN 6,577,753).

Regarding independent claim 1:

Ogawa discloses a data obtaining section to obtain the radiation image, and to identify the photography device [used to obtain the radiation image and the target form where the radiation image was obtained] (Ogawa col. 4 lines 13-50: The reference describes obtaining a radiation image (such as a CR apparatus, for example). The reference further describes a selection means 22 for identifying the type of photography device.).

Ogawa discloses an image processing condition storing section to store image tables each providing one of a plurality of processing conditions associated with one of various photography devices and targets (Ogawa col. 4

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lines 43-65: The reference describes LUT's (i.e. image tables) that provide an improcessing condition associated with the type of the apparatus.).

Ogawa discloses an image processing section to read from said image processing condition storing section the image processing condition [that corresponds to to the photography device used to obtain the radiation image and the target from where the radiation image was obtained] and to subject the radiation image [obtained by said data obtaining section] to image processing in accordance with the image processing condition read by the image processin section (Ogawa col. 4 lines 43-65: The reference describes reading a processing condition from the LUT's and subjecting the radiation image to image processing (i.e. the reference describes applying tone correction)).).

Regarding independent claims 2, 15, and 16:

Ogawa discloses a data obtaining section to obtain the medical image, and to identify the photography device and photography conditions used to obtain the medical image (Ogawa col. 4 lines 13-50: The reference describes obtaining a radiation image (such as a CR apparatus, for example). The reference further describes a selection means 22 for identifying the type of photography device.).

Ogawa discloses an image processing condition storing section to store image processing conditions that correspond respectively to various photography devices and photography conditions such that each image processing condition corresponds to a single photography device (Ogawa col. 4 lines 43-65: The reference describes LUT's (i.e. image tables) that provide an improcessing condition associated with the type of the apparatus. These image processing conditions correspond to a single photography device since each LUT corresponds to a single apparatus).

Ogawa discloses an image processing section to read from said image processing condition storing section the image processing condition [corresponding to the photography device and photography conditions used to obtain the medical image,] and to subject the medical image [obtained by said data obtaining section] to the image processing in accordance with the image processing condition [read by the image processing section.] (Ogawa col. 4 lines 43-65: The reference describes reading a processing condition from the LUT's and subjecting the radiation image to image processing (i.e. the reference describes applying tone correction)).).

Regarding claims 15 and 16, Ogawa also discloses a method and a storage medium.

Regarding dependent claims:

Regarding claim 5, Ogawa discloses an image processing condition operating section to add, to change, and to delete said image processing condition in response to an operation (Ogawa col. 5 lines 7-15: The reference describes changing the image processing condition in response to an operation such as the changing of the input apparatus.).

Regarding claim 6, Ogawa discloses an image display section to display the medical image subjected to the image processing by said image processing section (see Fig. 2).

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Regarding claim 14, Ogawa obtains a radiation image as the medical image (see Ogawa generally).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ogawa (USPN 6,577,753) and Ogura et al. (USPN 6,502,984). The arguments as to the relevance of Ogawa as applied above are incorporated herein.

With regard to claim 3, Ogura et al. discloses that the image processing section subjects the medical image obtained by said data obtaining section to at least a gradation conversion processing and a frequency emphasis processing (see column 15, lines 49-54: The reference describes that the image process means 73 subjects the image to processing including gradation correction and frequency emphasis.), and said image processing condition storing section stores a frequency emphasis function indicating a degree of frequency emphasis in which a gradation conversion function and an average density around respective points of the medical image are used as variables in accordance with the type of the photography device and the photography condition (see Fig. 29: As can be seen from the figure, the image process 73 means obtains information (i.e. the photography device type and the photography condition) from the image process condition determining means 75.).

It would have been obvious to one reasonably skilled in the art at the time of the invention to add this feature to the system of Ogawa to broaden Ogawa's scope of image processing to more than just tone correction by adding gradation conversion as taught by Ogura (Ogawa col. 6 lines 10-21).

With regard to claim 7, which is representative of claim 8, Ogura et al. discloses an interested area designating section to designate an area of interest on the medical image displayed in said image display section in response to an operation, wherein said image display section lowers a luminance of an area, excluding the area of interest designated by said interested area designating section, to display the medical image (see Fig. 32: From this figure it can be seen that a designated area of the medical image B1 has been displayed and that the luminance of an area excluding the area of interest B1 has been lowered as can be seen by area B2.).

It would have been obvious to one reasonably skilled in the art at the time of the invention to modify the Ogawa display to include an interested area designation section as taught by Ogura. Such a modification would have allowed for a way to more clearly display parts of the medical image.

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With regard to claim 9, which is representative of claim 10, Ogura et al. discloses a part recognizing section to recognize positions of a plurality of parts appearing in the medical image, wherein said image processing section subjects the area of interest, designated by said interested area designating section, to the image processing in accordance with a respective one of the plurality of parts appearing in the area of interest, and being among the plurality of parts having positions thereof which are recognized by said part recognizing section (see column 17, lines 9-27: The reference describes that photograph portion determining means (i.e. parts recognizing means) that determines a part based on a comparison with template parts (i.e. a plurality of parts).).

It would have been obvious to one reasonably skilled in the art at the time of the invention to modify the Ogawa disclosure by recognizing certain parts of the image as taught by Ogura. Such a modification would have allowed for would have allowed for each party to be processed more specifically and thus displayed more clearly.

With regard to claim 11, which is representative of claims 12 and 13, Ogura et al. discloses a scanning processing designating section to designate, in response to an operation, a scanning processing to set an area of interest on the medical image displayed in said image display section and to move the area of interest in a predetermined direction, wherein said image display section displays, in accordance with the scanning processing by said scanning processing designating section, the medical image in which the area of interest successively moves, and a luminance of an area, excluding the area of interest, is lowered (see column 16, lines 42-54: The reference describes a movable aperture stop (i.e. a scanning processing designating section) for determining an irradiated region B1 (i.e. designating a scanning processing of setting the area of interest on the medical image displayed in said image display section). This aperture stop can be moved to any region of interest that is desired.).

It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Ogawa's image processing steps by scanning only an area of interest as taught by Ogura. Such a modification would have allowed for a more precise method of processing certain aspects of the image.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ogawa (USPN 6,577,753), Ogura et al. (U.S. Patent No. 6,502,984 B2) and Ogura (U.S. Patent No. 6,314,198 B1). The arguments as to the relevance of Ogawa and Ogura et al as applied above are incorporated herein.

Claim 4 calls for the image processing section to subject the medical image obtained by the data obtaining section to a luminance correction processing using a dynamic range compression function in which the average density around the respective points of the medical image is used as the variable. Although Ogura et al. discloses a variety of image processing techniques such as gradation correction and frequency emphasis, the reference does not disclose the use of luminance correction processing. However, Ogura, in the same field of endeavor of image processing and the same problem solving area of radiation images discloses the use of luminance correction processing (see column 36, lines 20-30: The reference describes a luminance correction processing using a dynamic range compression processing function which uses the average density as a factor.).

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It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ogura et al. by adding the luminance correction processing as taught in Ogura because this type of processing allows the "optimum image processing for the radiographic, digital image without troubling the operator".

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L Edwards whose telephone number is (571) 272-7390. The examiner can normally be reached on 8:30am - 5:00pm M-F.

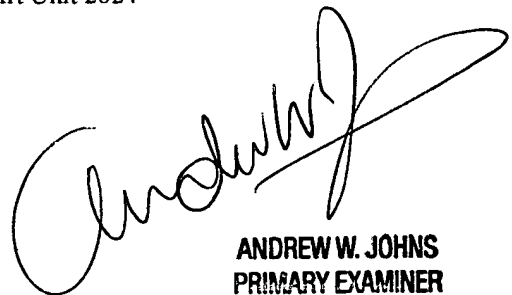
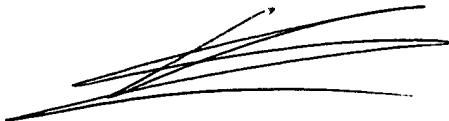
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Melta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick L Edwards

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ANDREW W. JOHNS
PRIMARY EXAMINER